

4690, Gary Community School Corp

PROJECT ABSTRACT

This project addresses the academic needs of Gary Community School Corporation (GCSC) by improving the participation and performance of our students in the areas of Science, Technology, Engineering and Math (STEM). This is also in line with initiatives in the State of Indiana and President Obama's "Educate to Innovate" campaign to improve STEM education for the nation's youth. The President announced a series of partnerships that involve leading companies, foundations, teachers, and scientists and engineers to help motivate and inspire American students to excel in science and math.

Current indicators of student progress in the GCSC point to poor achievement in a number of critical areas. These Indicators include student grades, performance on ISTEP+/GQE, district quarterly assessments, and the state's End of Course Assessment (ECA); resulting in a graduation rate of approximately 50.3% and a dropout rate of 25.1%. It is imperative that we address underlying reasons for the poor student achievement in this course.

An in depth analysis of performance data and teacher reflections on student classroom behavior suggests that poor achievement across the district can be attributed to a weak foundation in the pre-requisite basic skills and a lack of student engagement in the learning process. A primary goal of this project is to increase student motivation and engagement and to develop mastery of key basic skills by supporting the consistent and appropriate use of innovative technologies across the curriculum and grade levels. This project will serve approximately 1600 middle school students in three of our four newly configured career academies.

The innovative learning intervention selected has proven successful in a number of schools across the country and our state. New Tech has been adopted and received Distinguished Implementation in Indianapolis Public Schools, MSD of Decatur Township, and Rochester Community Schools. New Tech integrates five elements as a foundation for student learning.

- ¿Real-world experiences to develop 21st-century skills
- ¿Technology-rich design with a project-based learning focus
- ¿One-to-one computer-student ratio to facilitate learning
- ¿Integrated courses offering enriched, holistic learning opportunities
- ¿Instructors that create self-directed learning environments for students

GCSC is committed to incorporating new ways of learning and teaching and the redesign of our traditional schools into 21st-century schools that provides students with unique opportunities to gain the knowledge and skills to survive and succeed in the global economy while meeting state and federal standards for academic achievement.

The GCSC has strategically partnered with Columbus Signature Academy at Central Middle School located in Columbus, Indiana. Columbus Signature Academy is an award winning school that has an established middle school curriculum that incorporates twenty first century teaching and learning practices and aligns them with state standards. Columbus Signature Academy has agreed to share their best practices with GCSC by providing professional development for faculty and administrators participating in the middle school initiative. Professional development will consist of coaching, consulting, and technical assistance both in person and online.

We will also collaborate with the Center for Excellence in Leadership and Learning (CELL) and the P16 Initiative at Indiana University Bloomington for professional and curriculum development. Further, our other community college partners (Indiana University Northwest and IvyTech) agree, adopting the New Technology High School model and adapting it to fit with our middle schools is a project worth undertaking to facilitate the transition of students from middle school to high school. We believe that this transition is critical to strengthening pathways to secondary and postsecondary institutions or the workforce.

NEEDS/BASELINE

This grant will serve the needs of students of the Gary Community School Corporation. GCSC needs are similar to those of other urban districts in Indiana and around the country. The unemployment rate hovers at 15.9%. Per capita income, based on 2000 Census Data, is a derisory \$14,538.00. Approximately 32% of local families live below the poverty level. These conditions adversely affect our student population with approximately two-thirds of students qualifying for free and reduced lunch.

Economic issues that impact school enrollment are not new to Lake County. During the past 20 years Gary has lost thousands more jobs than created over the same period of time. This trend has had a negative effect on population, home ownership, and funding for K12 institutions. Enrollment in the district reflects the pattern of population decline that has plagued the city of Gary for years. School enrollment has steadily declined from a population of over 20,000 students a decade ago to an enrollment of less than 11,800 students this school year. We serve an overall student population of 99.3% minority (African American) with less than 1% limited English proficient. Approximately 18% of the student population is identified as special needs. Incidents of suspensions and expulsions are high with over 56.8 incidents per 100 reported in the 2007-2008 SY. It is clear that the Gary Community

School Corporation faces many challenges as we strive to meet the needs of large numbers of students that are identified as high risk. This is especially true for the middle school students that we serve.

The crisis of students in our school district includes widespread student apathy. Students just don't seem to care. Prospects for their future appear grim, and they are unwilling to put forth effort in the now for a future that appears to be very far away. They fail to see the connection between their current performance in algebra and their desires for a productive future. A review of the district's graduation rate indicates that approximately 50% of students in a cohort graduates within 4 years. It has become apparent that low achievement (Grades of D or F) in algebra 1 course, and the poor performance of algebra 1 students on the state-mandated Algebra 1 ECA, will dramatically impact graduation rates for the class of 2014. For this reason, it is imperative that we place students enrolled in this entry-level course on a track that will lead to success in future courses.

Current Performance(post school merger):

43% of elementary students did not pass the writing applications portion of English/ language arts on the ISTEP+.

45% of elementary students did not pass the literary response and analysis portion of English/ language arts on the ISTEP+.

43% of elementary students did not pass the mathematics portion of the ISTEP+.

62% of secondary students did not pass the writing applications portion of English/ language arts on the ISTEP+.

64% of secondary students did not pass the reading vocabulary portion of English/ language arts on the ISTEP+.

65% of secondary students did not pass the mathematics portion of the ISTEP+.

59% of secondary students did not pass the Algebra 1 End of Course Assessment.

3 of the 4 high schools are on the academic probation (PL221)

One high school is the 4th year of probation

6 of the 11 elementary schools are in school improvement.

The graduation rate is 50.3%

The dropout rate is approximately 25%

A new 7 & 12 grade configuration was implemented in the 2009-2010 school year. Under this configuration all eight of the middle and high schools mentioned above will be merged to form four

career/themed academies. Additional obstacles for the educating of African Americans especially are many and are seemingly intractable. They attend in many cases inferior elementary and secondary schools, African American with low aspirations tend to drop-out of high school in disproportionate numbers.

GOALS/OBJECTIVES

Goals/Objectives: Describe the student outcomes (e.g., achievement, motivation, engagement) to be accomplished through this project.

Research suggests that academic achievement in middle school strongly predicts high school achievement and graduation. Thus, early middle school signals of academic success or failure include: grade retention, course failures, grades and test scores, and enrollment in algebra by 8th grade.

Indicators of Middle School Achievement

A study conducted by CIL identified four middle school indicators that were found to predict high school performance:

1. Students' grade point average (GPA) in the 7th grade.
2. The number of core courses (English/language arts, mathematics, science, and social studies) that students failed in the 7th and 8th grades.
3. Whether students took (but not necessarily passed) algebra in 8th grade.
4. Scores on the states standards based assessment in English language arts and mathematics in 8th grade.

The GCSC Middle Project aligns the four indicators above with our goals for this grant.

Goals and Objectives

1. Increase the overall 7th grade GPA by 20%.
 - a. Tutoring support and activities
 - b. Mentoring partnerships
2. Decrease the number of students failing core courses by 15% within the first academic year

- a. Create engaging learning opportunities
- b. Tutoring support and activities
- 3. Increase the number of students attempting Algebra 1 in the 8th grade by 50%
 - a. Increase student achievement in the mastery of basic skills (fractions, decimals, and signed numbers) that form a foundation for success in algebra.
 - b. Demonstrate the connection between algebraic content and skills to applications in the real world and to selected career pathways.
 - c. Increase student motivation and student engagement in the learning process by incorporating a variety of computer- and calculator-based technologies.
 - d. Use innovative technology to support the development of student-developed instructional activities.
- 4. Improve passing scores on ECA in English and Mathematics by the end of the 8th grade
 - a. Provide focused, systematic, and ongoing professional development to support teacher integration of innovative technologies in the classroom.
 - b. Create and implement an interactive online learning environment that can be used at school and at home.

Given what we know from middle school indicators, targeting interventions early is the primary purpose of identifying students at risk of dropping out or not meeting graduation requirements. The findings from this study contribute to a growing body of research identifying early signals of academic success or failure. These signals include: grade retention, course failures in core academic subjects in middle school, middle school grades and test scores, and enrollment in algebra by 8th grade.

METHODS/ACTIVITIES

: Identify and describe the curricula and teaching strategies that will be used to integrate technology effectively into classroom instruction.

The Moodle will serve as the primary delivery system for student learning interventions and professional development activities. Moodle is a software program for electronic or "e-learning," a category of programs that are variously identified as "Course Management Systems" (CMS), "Learning Management

Systems" (LMS), or "Virtual Learning Environments" (VLE). Many of the mechanics of classroom operation—such as assignments, scheduling, and quizzes—can be easily set up through simple resource-based courses. Moodle also has a broad variety of additional modular features and a relatively quick learning curve, helping educators easily and effectively develop full online classes, either in advance or as the course is being taught. This versatility allows Moodle to be used in a variety of ways depending on the needs and capabilities of the school or district: from simple classroom management to pure e-learning—or a blended combination of the two, with e-learning content and utilities extending on-site classroom learning.

We will all incorporate an existing project to leverage learning outcomes and resources to increase the probability of success. Approximately five years ago, the mathematics department was awarded a mini-grant to support the creation of teacher-developed interactive activities to engage the interest of our secondary students. Through the support of this grant, we successfully used power point as a tool for creating a variety of games (Jeopardy, Who Wants To Be a Millionaire, etc.) We created an extensive website (www.steelcitymath.org) to support our students and the community. Much of the work that we are proposing through this grant has been preceded by a tremendous investment of teacher effort into the integration of technology.

It is important to insure active partnerships have been formed that will support the full implementation of the goals and objectives of this project. The district is pleased to have on our teaching staff the services of a certified regional Texas Instruments Instructor. We have also worked this past year with Texas Instruments Regional Staff to put in place a pilot of the highly acclaimed TI Math Forward Program at the middle school level. Funding from this grant will support the implementation of the plan with algebra teachers across the district.

Approximately 40% of our algebra 1 teaching staff is working with limited licenses. Teacher losses through both retirement and death have taken a heavy toll on certified staffing. For this reason, a structured curriculum with recommended pacing and activities is desirable to ensure that staff will apply the focus and rigor needed to adequately prepare our students.

Summary of Methods and Activities:

1. A well-defined standards-based curriculum which strongly integrates a variety of technologies
2. Structured professional development from a variety of providers through a variety of platforms
3. Ongoing collaboration among algebra 1 teachers at the district-level
4. Development of Moodle sites to support collaboration among core subject teachers, between student and teacher, and among students across the district

Approximately 40% of our algebra 1 teaching staff is working with limited licenses. Teacher losses through both retirement and death have taken a heavy toll on certified staffing.

Summary of Methods and Activities:

1. Disseminate syllabi across the district which communicates to students a common core of expectations for the district's course in algebra 1.
2. Incorporate the regular use of the state's High Achiever website to ensure that students are familiar with the types of questions
3. Standardize instruction in remediation sessions designed to support passing of the Algebra 1 ECA.

PROFESSIONAL DEVELOPMENT

Approximately (40%) of the grant funds will be used to support the integration of technology into teaching and the curriculum. Previously, professional development in the area of technology has not been offered in an on-going, consistent manner. The technology training was not focused on one content area and one group of teachers with face-to-face support over a long period of time. Therefore, professional development with middle school teachers on the effective use of best practice is needed.

This technology grant will provide the resources and specificity needed to build the capacity of teachers to ensure the infusion of appropriate technology into the curriculum. Professional development will be structured to offer consistent, online and on-site professional development for teachers. Included in this structured professional development is the opportunity for teachers to collaborate across curriculums on the effective use of technology and to teach proven concepts through peer coaching within the school and among the schools.

Collaboration and peer coaching will be achieved using released time. Peer coaching guidelines will be provided so that reasonable expectations are realized. In addition, the monitoring of student performance will be an ongoing part of the PD including the examination of student work, analysis of district results on quarterly assessments (DQAs). Outcome- based strategies will be employed to ensure that the professional development opportunities tie the use of algebraic concepts to real world situations. University and business partners will assist us in making this important connection to the real world.

Professional Development will also be extended to parents and the community to support the middle school grant initiative. Research suggests that ss partners, parents and teachers share responsibility for the education and development of their children. Common messages and collaborative activities of home and school help to promote student success, prevent problems, or solve those that arise.

Nationwide, rhetoric in favor of parent involvement is high, but the quality of most programs still is low. Part of the problem is that most teacher education, administrative training, and other education of school professionals omit topics of school, family, and community partnerships. Instead, educators are prepared in limited ways to "deal with parents" when problems occur. Therefore, we will aim to bridge this divide with intentional professional development activities for parents and teachers.

The Professional Development Calendar below details each activity, audience, and benchmark by date. The initial professional development will address the introduction of the program to teachers and staff with progressive introduction of how to effectively use the hardware and software in the classroom to engage learners. All participating teachers will revise the curriculum to include the technological support for key concepts. Together, technology and curriculum alignment, will allow teachers to collaborate on the integration and delivery of content to the students using the technological resources.

Professional Development Calendar

Date	Activity	Target Audience	Benchmark
January 2010	Retreat	Leadership Team	
Jan-Feb 2010	Implement Moodle(LMS)		Technology Team
February 2010	Parent Workshop		Parents and Community
February 2010	Partner Visit	Teacher and Admin	
February 2010	Moodle Workshop		Teacher and Admin
March 2010	Pilot LMS	Selected Teachers	
March 2010	Visit to Partner	Teacher and Admin	
April 2010	Partner Visit	Teacher and Admin	
April 2010	Evaluation of LMS		Teacher and Partner
May 2010	Survey Students		Teacher and Student
May-June 2010	Student Assessments		Teacher and Student
July 2010	NECC Conference		Teachers and Admin

Ongoing activities will consist of Bi-weekly on-site collaborations of administrators and teacher

FORMATIVE/SUMMATIVE EVALUATION

Formative & Summative Evaluation: How will you measure progress and success during the implementation of this project? (IDOE will conduct a summative evaluation of the project).

In the bestseller, *Good to Great*, author Jim Collins speaks to how good companies, mediocre companies, and even bad companies achieve enduring greatness. Like companies, educational institutions also seek to achieve enduring greatness. Collins states that to achieve this greatness there must be a willingness to “face the brutal facts”.

The Mathematics Department has “faced the brutal facts”:

- “ Student performance in mathematics at the secondary level is dismal.
- “ Students are not engaged in instruction and apathy is widespread.
- “ Integration of calculator technology has been sporadic at best, even when technology has been readily available.
- “ Integration of computer technology within the classroom setting is practically nonexistent.

We are addressing these “brutal facts” by removing valid excuses and rejecting invalid ones. Provisions will be made to ensure availability of technology for each teacher. Professional development support will be provided through varied sources, through varied methods, and will be ongoing. And most importantly, curricula that incorporates the technology will be integrated into curriculum maps and pacing guides. Every attempt has been made to remove obstacles that may have hindered prior successes.

The progress and success of this project will be measured by reviewing each of the following:

- “ Passing rates for the Algebra 1 ECA (Spring 2010)
- “ Student Mastery of Basic Skills

At least 70% of students will pass the District Basic Skills Test

- ¿ Revised Curriculum Resources
- ¿ Student Engagement
- ¿ Professional Development - Participation
- ¿ Technology ¿ Verification of Use

Formative/Summative Assessments for Students

Formative Assessments will include the monthly evaluation of constructed/extended response items using a rubric, results as reported on the web-based practice program (High Achiever) provided by IDOE, results of the online district quarterly assessments (DQAs), results of quick polls and mini-quizzes provided through classroom performance systems (clickers). Using the Algebra I ECA (Spring 2008) as baseline data, we can gauge student progress from 2008 - 2010 to determine the effectiveness of this project.

Student Engagement

A review of attendance patterns, teacher observations, surveys of student interest, and quality and quantity of student-developed activities will provide useful information regarding the impact that we are having on student engagement through this project.

Each student will be expected to complete at least one game, tutorial, or project each semester. Teachers will post selected projects and activities on their personal moodle page or at the Steel City Math Website.

Teacher Verification of Use Forms

Monitoring will take place in a variety of ways. Classroom observations by administrative staff, peer review of products, self-evaluation, and student surveys will be used to determine the level of teacher use in the classroom setting.

We will document the use of technology through verification of use forms signed by either media specialists, technology coaches or designated district or building administrators. In addition, teachers will be required to provide at least one instructional tutorial for posting on Moodle or other platforms monthly (September & May).

Revised Curriculum Resources

Curriculum maps, pacing guides, and remediation materials for Algebra 1 ECA re-testers will be posted on the district websites for downloading. These documents will be used consistently at all professional development sessions. As units of study are completed, teachers will be asked to evaluate curriculum and activities and suggest/make changes.

LOCAL MATCH

\$100,000

Local dollars will be used for the purchase of equipment to implement Smart Classroom technology. The Smart Classroom Technology consists of mobile technology solutions i.e. Smartboard, wireless tablet, laptop computer, visual presenter, DVD player, LCD projector, interactive response system. Smart Technology encourages academic achievement through challenging technology based lessons that help students feel more engaged in the learning process. Several of these systems will be purchased to facilitate the integration of technology in the classroom.

PARTNERSHIPS

The GCSC has strategically partnered with Columbus Signature Academy at Central Middle School located in Columbus, Indiana. Columbus Signature Academy is an award winning school that has an established middle school curriculum that incorporates twenty first century teaching and learning practices and aligns them with state standards. Columbus Signature Academy has agreed to share their best practices with GCSC by providing professional development for faculty and administrators participating in the middle school initiative. Professional development will consist of coaching, consulting, and technical assistance both in person and online.

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communication, and technology methods to improve academic achievement and economic development. Schools and teachers can elect to go through a rigorous evaluation process and self-assessment to determine their effectiveness.

One of the most exciting aspects of this project is the placement of innovative technology into the hands of the students. Students will use emerging instructional technology to create and share research, engage in interactive activities and tutorials. While using these new tools, they assume the role of teacher and increase their understanding by explaining their thinking to others. We are convinced that the integration of these teaching and learning technologies along with the incorporation of real-world applications represents a giant step toward reaching our primary goal of improved student achievement.